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REMARKS

This application has been amended in a manner that is believed to place it in condition for allowance at the time of the next Official Action.

In the outstanding Official Action, claims 19-23, 25-28 and 31-36 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1, 2 and 6-10 of co-pending application 09/913,596 ('596).

The Official Action contends that the claims of both applications are directed to a process of oxidizing a primary alcohol function of a carbohydrate using a nitroxyl compound. This rejection is respectfully traversed.

It is believed that the claims of each application, as presented, are patentably distinct. In addition, it is respectfully submitted that the double patenting rejection improperly relies on the specification from each application.

Claim '19 has been amended to recite a process for oxidizing primary alcohols of a non-cellulose composition by using a nitroxyl compound and an oxidizing agent. Claim 31 has been amended to recite non-cellulose compositions. In addition, we added new claim 37. Support for these changes may be found at

page 5, lines 12-15 in the present specification.

Thus, the presently-claimed invention is directed to carbohydrates of the non-cellulose type. The claims of co-pending application '596 are directed to a process for oxidizing cellulose. The claims recite contrasting subject matter and are not co-extensive in scope. As the present application claims non-cellulose substrates, it is respectfully submitted that one of ordinary skill in the art would find the co-pending application '596 claiming cellulose substrates distinct from the present application.

The Official Action relies on the specification of each application in an attempt to show that the subject matter of each application may overlap (see top of page 4 of outstanding Official Action). However, it is respectfully submitted that only the claims of each application are at issue. Section 804 of the MPEP provides that when determining whether a non-statutory double patenting rejection is proper, one must rely on a comparison of the claims at issue. When considering whether an invention claimed in an application is obvious in view of the claims of a co-pending application, the disclosure of the co-pending application may not be used as prior art. It is respectfully submitted that the Official Action improperly relies upon the specification in order to make a non-statutory double patenting rejection.

Thus, it is respectfully submitted that the claims of

each application are patentably distinct and that the Official Action improperly relies on the disclosures of each application, it is believed that the provisional non-statutory double patenting rejection should be withdrawn.

In the outstanding Official Action, claims 19-30 were rejected under 35 USC 112, first paragraph for allegedly being based on a non-enabling disclosure. This rejection is respectfully traversed.

The Official Action contends that due to the tremendous number of enzymes and compounds containing primary alcohols, one would have great difficulty in practicing the claimed invention without more guidance from the specification. However, the claimed invention is not directed to an unlimited number of enzymes or compounds containing primary alcohols.

Claims 19-30 are directed to non-cellulose compounds containing primary alcohols capable of being oxidized with a nitroxyl compound and an oxidizing agent. The non-cellulose primary alcohol is oxidized in the presence of an enzyme and/or a metal complex. While it may be true that a large number of enzymes and compounds containing primary alcohols may exist, the skilled artisan need only concern himself with those enzymes and compounds that enable a process for oxidizing a non-cellulose primary alcohol using a nitroxyl compound and an oxidizing agent.

Thus, it is respectfully submitted that one of ordinary skill in the art would be capable of practicing the claimed process

without additional guidance from the specification.

In fact, it is respectfully submitted that the Official Action fails to provide any evidence or reasoning substantiating the contention that the claimed process is not supported by enabling disclosure. As the Examiner is aware, any assertion by the Patent Office that the enabling disclosure is not commensurate in scope with the protection sought must be supported by evidence or reasoning substantiating the doubt so expressed. *In re Bowen*, 181 USPQ 48 (CCPA 1971). Cited concurrently herewith; *In re Gardner*, 475 F.2d 1389, 177 USPQ 396 (CCPA 1973); *In re Marzochi*, 439 F.2d 220, 109 USPQ 367 (CCPA 1971). The outstanding Official Action contends that one of ordinary skill in the art would find it reasonable to predict that the reactions involving enzymes and primary alcohols would have different outcomes. Moreover, the Official Action provides an example of an enzymatic reaction that acts differently under vastly different conditions. However, the Official Action fails to provide any evidence or reasoning suggesting that a process for oxidizing a non-cellulose primary alcohol using a nitroxyl compound and an oxidizing agent is not supported by enabling disclosure. While the outstanding Official Action discusses enzymes and primary alcohols in general, it is respectfully submitted that the outstanding Official Action fails to meet its burden in showing that claims 19-30 are not supported by an enabling disclosure.

The present specification clearly teaches enzymes and non-cellulose compounds containing primary alcohols that allow one of ordinary skill in the art to practice the claimed invention. For example, the specification discloses a number of compounds that can be used in the claimed process (see page 2, line 11 to page 3, line 10). The present specification also provides examples of enzymes that may be used in the claimed invention (page 3, line 10 to page 4, line 9).

While it is true that the present specification does not provide a detailed example for each and every enzyme or non-cellulose primary alcohol, it is respectfully submitted that the number and variety of examples is irrelevant if the disclosure is "enabling" and sets forth "the best mode". *In re Borkowski et al.*, 442 F.2d 904, 164 USPQ 642 (CCPA 1970). The present specification provides several working examples showing oxidation reactions in the presence of a nitroxyl radical and an oxidizing agent. However, it is respectfully submitted that the present specification clearly enables embodiments beyond the working examples. It is respectfully submitted that the Official Action fails to consider the disclosure of the entire specification. As noted above, the present specification clearly describes a number of enzymes and non-cellulose primary alcohols which are capable of being used in the present invention. While detailed working examples are not provided for each and every enzyme and non-cellulose primary alcohol, it is respectfully submitte that one

skilled in the art would possess the requisite knowledge to practice the claimed invention.

The Examiner is respectfully reminded that the test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. *In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976). In fact, a disclosure is enabling, even if a considerable amount of experimentation is involved, if it is merely routine and not unduly extensive. The present specification clearly describes enzymes, non-cellulose primary alcohols and process conditions to practice the claimed process. Any experimentation that would have to be done, certainly would be routine to one of ordinary skill in the art. Thus, it is respectfully submitted that the claimed process is supported by an enabling disclosure.

In the outstanding Official Action, claims 20, 22, 24, 26 and 31-36 were rejected under 35 USC 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the present invention. It is respectfully submitted that claims 19-39 have been drafted in a manner that is believed to obviate the rejection under 35 USC 112, second paragraph set forth in the outstanding Official Action. It is respectfully submitted that claims 19-39 are definite to one of ordinary skill in the art.

In the outstanding Official Action, claim 30 was

rejected under 35 USC 102(a) as allegedly being anticipated by VIKARI et al. (WO 99/23117). This rejection is respectfully traversed.

VIKARI et al. discloses a process for oxidizing a primary alcohol in the presence of an enzyme and nitroxyl compound. However, the primary alcohol is found in cellulosic textile fibers. Thus, it is believed that VIKARI et al. fails to anticipate or render obvious an oxidation process involving a non-cellulose primary alcohol.

In the outstanding Official Action, claims 19-36 were rejected under 35 USC 103(a) as allegedly being unpatentable over co-pending application '596. This rejection is respectfully traversed.

It is respectfully submitted that the '596 co-pending application fails to qualify as prior art. As noted in 35 USC 103(c), subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person. Applicants note that the inventions were owned by the same person at the time the inventions were made. Thus, it is respectfully submitted that co-pending application '596 fails to qualify as prior art.

In view of the present amendment and the foregoing

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remarks, therefore, it is believed that this application has been placed in condition for allowance. Allowance and passage to issue on this basis is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 19 has been amended as follows:

19. (amended) A process for oxidizing a non-cellulose primary alcohol using a nitroxyl compound and an oxidizing agent characterized in that the primary alcohol is oxidized in the presence of an enzyme capable of oxidation and/or in the presence of a metal complex, in an aqueous medium, or in a mixture of water with an alcohol, an ether or a water-immiscible organic solvent.

Claim 20 has been amended as follows:

20. (amended) A process according to Claim 19, wherein the nitroxyl compound is a di-tert-nitroxyl compound[, especially 2, 2, 6, 6-tetramethylpiperidin-1-oxyl (TEMPO)].

Claim 22 has been amended as follows:

22. (amended) A process according to Claim 21, wherein the enzyme is a peroxidase, [especially horse radish, soy-bean, lignin peroxidase or myelo- or lacto-peroxidase,] and the oxidizing agent is hydrogen peroxide.

Claim 24 has been amended as follows:

24. (amended) A process according to Claim 19, wherein the enzyme is a [hydrolase, especially] phytase or lipase[, in

the presence of a metal compound].

Claim 25 has been amended as follows:

25. (amended) A process according to Claim 19, wherein the primary alcohol is [comprised] in a carbohydrate.

Claim 26 has been amended as follows:

26. (amended) A process according to Claim 25, wherein the carbohydrate is an α -glucan or fructan or a carboxyl derivative [thereof] obtained by further oxidation or by carboxyalkylation.

Claim 29 has been amended as follows:

29. (amended) A process according to [Claims] Claim 19, wherein the primary alcohol is [comprised] in a steroid compound.

Claim 30 has been amended as follows:

30. (amended) A process according to Claim 19, wherein the primary alcohol is [comprised] in textile fibers.

Claim 31 has been amended as follows:

31. (amended) An oxidized carbohydrate, [the] said carbohydrate being selected from the group consisting of disaccharides, oligosaccharides [and] or polysaccharides of [the

glucan] alpha-glucan, mannan, galactan, fructan, and chitin types, and carbohydrate [glycoside] glycosides, containing at least 1 cyclic monosaccharide chain group carrying a carbaldehyde group per 25 monosaccharide units and per average molecule, or a [chemical] carboxyalkyl derivative obtained by further oxidation or carboxyalkylation thereof.

Claim 34 has been amended as follows:

34. (amended) A carbohydrate derivative according to Claim 31, in which the derivative of at least a part of the carbaldehyde groups has been converted to a group with the formula $-CH=N-R$ or $-CH_2-NHR$, wherein R is hydrogen, hydroxyl, amino, or a group R^1 , OR^1 or NHR^1 , in which R^1 is C_1 - C_{20} alkyl, C_1 - C_{20} acyl, a carbohydrate residue, or group coupled with or capable of coupling with a carbohydrate residue.

Claim 35 has been amended as follows:

35. (amended) A carbohydrate derivative according to Claim 31, in which the derivative of at least a part of the carbaldehyde groups has been converted to a group with the formula $-CH(OR^3)-O-CH_2-COOR^2$ or $-CH(-O-CH_2-COOR^2)_2$, in which R^2 is hydrogen, a metal cation or an optionally substituted ammonium group, and R^3 is hydrogen or a direct bond to the oxygen atom of a dehydrogenated hydroxyl group of the carbohydrate.